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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,575	03/30/2001	Naoki Nagasako	09792909-4797	7195

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EXAMINER

RUDE, TIMOTHY L

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 05/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,575

Applicant(s)

NAGASAKO, NAOKI

Examiner

Timothy L Rude

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. Figures 2-5 illustrating a conventional micro-lens type liquid crystal panel (Application, page 2, lines 5-8) should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Lagerwall et al (Lagerwall) USPAT 6,184,967.

As to claim 1, Lagerwall discloses in Figures 5 and 3A a liquid crystal display apparatus comprising: a liquid crystal panel having a pair of substrates, 1 and 2, facing to each other; and liquid crystal material (col. 9, lines 9-12) sealed between said pair of substrates, wherein said pair of substrates being sealed not only at a first seal portion, 4, located at peripheral portion of said substrates but also sealed at a linear-shaped spacer, 12, (Applicant's second seal portion) located outside of an effective picture element area and adhered to the opposite substrate with a binder or any other type of joint (col. 11, lines 23-25 and col. 12, lines 22-25).

FIG.5

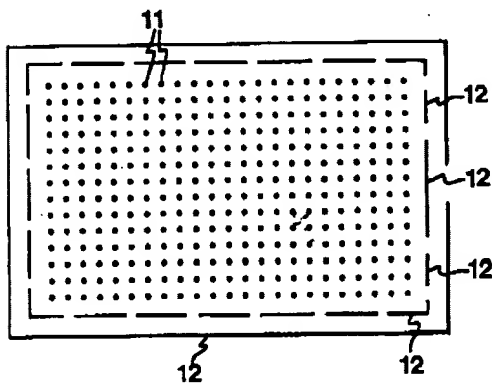
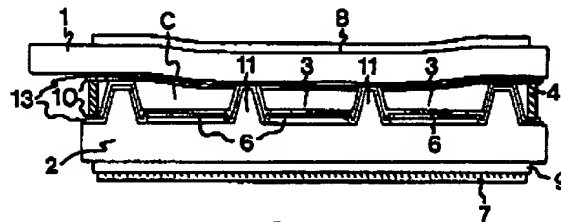


FIG.3A



As to claim 4 the manufacturing method of a liquid crystal display apparatus having a liquid crystal display panel, comprising the steps of: superposing a pair of facing substrates to form said liquid crystal display panel; and injecting liquid crystal display material between said pair of facing substrates, wherein a first seal material is coated on periphery of said pair substrates, and a second seal material is coated in dot-shaped and/or linear-shaped form at portions located at outside of an effective picture

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element area of said liquid crystal display panel would have been obvious given the structure of rejected claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA) in view of Lagerwall.

As to claims 2 and 3, APA discloses in Figures 2-5 an LCD apparatus wherein said liquid crystal panel is a micro-lens type liquid crystal display panel having an injection gate, 9, for liquid crystal material, a TFT substrate, 2, a micro-lens, 3, equipped facing substrate, 4, and on-chip spacers, 6, there-between.

APA does not explicitly disclose the apparatus as cited in Claim 1.

Lagerwall teaches the apparatus as cited in Claim 1, per 102e rejection above.

Lagerwall teaches dot-shaped spacers, 11, (Applicant's said second seal portion includes said dot-shaped seal portions) at neighbor of corners of said effective picture element area (four corners in figure 5) and further includes linear-shaped spacers, 12, (Applicant's linear-shaped second seal portions/part(s)) located and extending along an

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edge of the effective picture element area on all four sides (Applicant's opposite to said injection gate for liquid crystal material).

Lagerwall teaches the motivations for adding linear-shaped spacers, 12, (Applicant's second seal portions) located outside of an effective picture element area and adhered to the opposite substrate with a binder or any other type of joint (col. 11, lines 23-25 and col. 12, lines 22-25), including improved flow during LC fill, avoiding LC alignment defects, and preventing void formation in the active part of the display at low temperatures (col. 10, lines 30-40), and to produce a rigid display (col. 11, lines 18-25).

Lagerwall is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add dot-shaped and linear-shaped spacer/seal portions to prevent void formation in the active part of the display at low temperatures.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of APA with the seals of Lagerwall.

As to claim 5, the manufacturing method of a liquid crystal display apparatus as cited in Claim 4, wherein said pair substrates are a TFT substrate and a micro-lens equipped facing substrate, and said pair of substrates are superposed and sealed after forming on-chip spacers there-between would have been obvious given the structure of rejected claim 2 above.

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As to claim 6, the manufacturing method of a liquid crystal display apparatus as cited in Claim 4 or Claim 5, wherein said second seal material is not only coated in dot-shaped form at neighbor of corners of said effective picture element area and an injection gate for liquid crystal material but also coated in linear-shaped form and extended along an edge of the effective picture element area at a portion located opposite to said injection gate for liquid crystal material would have been obvious given the structure of rejected claims 2 and 3 above.


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



Timothy L Rude
Examiner
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James D. Dele
Primary

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TLR

May 22, 2002